CLAIMS

1. An intraocular replacement lens system for implant into a capsular bag of an eye, said lens system comprising:

a first lens having a first edge;

a second lens having a second edge; and

at least one fulcrum connecting said first and second edge to place said first lens and second lens at a predetermined distance from each other and to place said lenses along a common axis and to constrain movement of said lenses along the common optical axis.

2. The intraocular replacement lens system of claim 1 further comprising:

a first haptic member connected to said at least one function at said first edge; and

a second haptic member connected to said at least one fulcrum at said second edge, the connection of said first and second haptic members at said at least one fulcrum providing a scissor-type mechanism having a lever effect on said first and second lenses to produce movement of said lenses along the common optical axis when said haptic members are moved toward or away from each other, said distance between said lenses determining the focal length of said lens system.

3. The intraocular replacement lens system of claim 2 wherein direction of movement of said first and second haptic members is inversely proportional to the direction of movement of said first and second lens such that when said haptic members are moved toward each other said lenses move away from each other and vice versa.

4. The intraocular replacement lens system of claim 2 wherein said at least one fulcrum is formed from material selected from the group comprising plastic hinges, annular pivots and narrow flexible joints.

5. The intraocular replacement lens system of claim 4 wherein said lens system is a one-piece assembly.

6. The intraocular replacement lens system of claim 2 wherein said first lens is a positive lens and said second lens is a negative lens.

7. The intraocular replacement lens system of claim 6 wherein said first and second lenses are formed from material selected from the group comprising a high index material, sapphire, plastic, acrylic and acrylic polymers.

8. The intraocular replacement lens system of claim 6 wherein when said lens system is implanted into said capsular bag of said eye, said first and second haptic members extend toward an inner edge of said capsular bag which is adjacent to ciliary muscles and ciliary fibers of said eye.

9. The intraocular replacement lens system of claim 8 wherein when said lens system is implanted into said capsular bag of said eye, said positive lens is oriented closer to the iris of said eye while said negative lens is oriented away from said iris.

10. The intraocular replacement lens system of claim 9 wherein when said ciliary muscles contract, said capsular bag is stretched thereby moving said haptic members toward each other causing said lenses to move away from each other shortening the focal length of said lens system to permit focusing of object at near distances.

11. The intraocular replacement lens system of claim 10 wherein when said ciliary muscles relax, said capsular bag relaxes thereby moving said haptic members away from each other causing said lenses to move toward each other increasing the focal length of said lens system to permit focusing of objects from far distances.

12. The intraocular replacement lens system of claim 11 wherein said scissor-type mechanism assures continuous alignment of said lenses along said common optical axis regardless of the application of unbalanced forces at said first and second haptic member.

13. The intraocular replacement lens system of claim 12 wherein combination of said positive and negative lenses of said intraocular lens system results in a high optical gain and a large focusing range of said lens system.

14. The intraocular replacement lens system of claim 13 wherein said first and second lenses are positioned so that their respective closest surface points are at a predetermined distance from each other such that movement of said lenses along said common optical axis maintains a proper focal plane on a retina of said eye.

15. The intraocular replacement lens system of claim 14 wherein said positive lens has a focal length between +5 mm to +12 mm and said negative lens has a focal length between -5 mm to -12 mm.

16. The intraocular replacement lens system of claim 15 wherein said predetermined distance between said first and second lens is between 0 mm to 5 mm.

17. A method for making an intraocular replacement lens system for implant into a capsular bag of an eye, said method for making comprising the steps of:

providing a first lens having a first edge;

providing a second lens having a second edge;

providing at least one fulcrum; and

connecting said at least one fulcrum to said first and second edges to place said first lens and second lens at a predetermined distance from each other and place said lenses along a common optical axis and constrain movement of said lenses along said common optical axis.

18. The method of claim 17 further comprising the steps of:

providing a first haptic member;

connecting said first haptic member to said at least one fulcrum at said first edge;

providing a second haptic member; and

connecting said second haptic member to said at least one fulcrum at said second edge, the connection of said first and second haptic members at said fulcrum results in a scissor-type mechanism providing a lever effect on said first and second

lenses to produce movement of said lenses along said common optical axis when said haptic members are moved toward or away from each other to thereby establish gain, said distance between said lenses determines a focal length of said lens system.

19. An intraocular replacement lens system for implant into a capsular bag of an eye, said lens system comprising:

a first lens having a first edge;

a first flex interface connected to said first lens at said first edge;

a second flex interface connected to said first lens at said first edge, said second flex interface located opposite said first flex interface;

a second lens having a second edge;

a third flex interface connected to said second lens at said second edge;

a fourth flex interface connected to said second lens at said second edge, said fourth flex interface located opposite said third flex interface;

a first haptic member attached to said first and second flex interface at a bend point at each of said first and second flex interface;

a second haptic member attached to said first and second flex interface at a bend point at each of said first and second flex interface, said second haptic member located opposite said first haptic member;

a third haptic member attached to said third and fourth flex interfaces at a bend point at each of said third and fourth flex interface;

a fourth haptic member attached to said third and fourth flex interface at a bend point at each of said third and fourth flex interface, said fourth haptic member located opposite said third haptic member;

a first fulcrum connecting said first and third haptic members; and

a second fulcrum connecting said second and fourth haptic members to place said first lens and second lens at a predetermined distance from each other and place said lenses along a common optical axis and constrain movement of said lenses along said common optical axis.

20. The intraocular replacement lens system according to claim 19 wherein said first, second, third and fourth haptic members are oriented parallel to said first and second edges.

21. The intraocular replacement lens system according to claim 20 wherein when said first and third haptic members are moved toward each other, said first and second lens move away from each other.

22. The intraocular replacement lens system according to claim 21 wherein said second and fourth haptic members are moved toward each other, said first and second lens move away from each other.

23. A lens system for implant into the capsular bag of a human eye in place of the natural crystalline lens, the lens system comprising:

a pair of interconnected hinged lenses spaced from one another along a common optical axis, the relative spacing between the lenses being controllable along said axis by the human eye after implanting therein, said spacing determining the focal length of said lens system, one of said lenses having a focal length in the range of 5 mm to 12 mm and the other of said lenses having a focal length in the range of -5 mm to -12 mm whereby a change in said spacing produces a change in said focal length of said lens system which is between 6 and at least 23 times said spacing change.